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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,526	03/11/2005	Junichi Seki	03500.017685	7445
5514 7590 02/26/2007 FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			EXAMINER DUPUIS, DEREK L	
			ART UNIT 2883	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/26/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/527,526	SEKI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Derek L. Dupuis	2883	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 January 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,7,8 and 10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,7,8 and 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/12/2007 has been entered.

### ***Response to Arguments***

2. Applicant's arguments filed 1/12/2007 have been fully considered but they are not persuasive. In pages 2 and 3, applicant argues that Allan et al do not show the direction of cyclicity of the periodic crystal section. The examiner points out that the hole sections of the periodic crystal are shown as dashed lines in figure 23.

3. The examiner has understood the limitation "the direction of cyclicity" to mean the direction in which the periodic structure is repeated. Figure 23 is merely an embodiment using the controller in combination with the photonic crystal slab used in other embodiments. A planar photonic crystal slab has at least two directions of cyclicity. As shown in the broadest example of the photonic crystal slab, the crystal has a direction of cyclicity in the y direction, and the x direction. Both of these directions have a repeating cyclic structure. The slab crystal used in the various embodiments is best shown in figure 14. As shown in this figure, the direction of cyclicity is in a front to back direction of the figure.

4. In figure 23, the direction of cyclicity would be in the front-to-back direction (going into and out of the page). The actuator (154) does show a direction of force with the arrows shown in

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figure 23. The left-to-right force arrows are perpendicular to the direction of cyclicity (front-to-back).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 7, 8, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by *Allan et al (US 6,674,949 B2)*.

7. Regarding claims 1 and 10, Allan et al teach an optical deflector shown best in figure 23.

The deflector includes a photonic crystal section (110) comprising a bulk material (12) with through holes (14) (see column 3, lines 10-22). A typical photonic crystal section is shown in figure 10. The crystal includes a core (71), an upper cladding (74), and a lower cladding (72). The core and claddings include the photonic crystal structure with through holes. The deflector includes a light lead-in means for leading light into the photonic crystal section (110). Allan et al teach an external force application means (154) that exerts a mechanical force of the photonic crystal upper cladding section (see column 10, lines 23-24). The force results in deformation and a change in dimension of the upper cladding section of the photonic crystal (see column 10, lines 32-41). This change in dimension results in a change of the index of refraction of the photonic crystal cladding which modifies the propagation of the photonic crystal (see column 10, lines 32-

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41). As shown in figure 23, the actuator (154) exerts a mechanical force (see left-to-right arrows) in a direction perpendicular to the direction of cyclicity (into and out-of the page).

8. Regarding claim 7, Allan et al teach an optical deflector as discussed above in reference to claim 1. The deflector includes a light lead in and a light lead out means (see column 11, lines 10-41).

9. Regarding claim 8, Allan et al teach an optical deflector as discussed above in reference to claim 1. The preamble of the claim "an optical scanner" has not been given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951). Furthermore, the use as a scanner is an intended use and is not given weight since it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, USPQ2d 1647 (1987).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derek L. Dupuis whose telephone number is (571) 272-3101. The examiner can normally be reached on Monday - Friday 8:30am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Derek L. Dupuis  
Group Art Unit 2883



**Frank G. Font**  
**Supervisory Patent Examiner**  
**Technology Center 2800**